disposal. Now, one could easily ascertain the degree of temperature to which the gas and air must be boated in order to receive reinforcement of the combustible value of the gas by the hereinbefore ascertained total amount of energy of about 11,600 calories. Would then, however, tho temperature demanded result under all circumstances from tho combustion of the gas ?

The question is absolutely to bo answered in the negative, and the fact previously quoted that in steel manufacture the utilisation of the fuel can be much bettor than as hereinbefore calculated, turns out to be the actual cause of tho latter phenomenon, in spite of tho fact that a temperature over 1,800° will never be observed in the combustion chamber. If, that is to say, the conditions for a consumption of boat are present in the combustion chamber, at tho moment of combustion the total amount of energy of the products of combustion could not be taken away, but a portion thereof be immediately removed by the remaining heat consumers present, and as a consequence thereof must produce a lower temperature of combustion than potentially obtainable from the sources of energy and products of combustion present were they isolated.

Now since in an empty furnace the losses by radiation are quite considerable, the existence of a consumption of heat is proved to exist, thus the minimum temperature required will only admit of being obtained at all if the gas arid air are always so much the more preheated, an stipulated for by this capacity for heat consumption. Tho extent thereof is not by any means easy to determine, and if one could do so it would not help much, for tho capacity of the combustion chamber for consuming heat is different at different times in the course of the charge, whilst on tho other hand it IB not possible rapidly and at will to alter the temperature of the regenerator chambers and the composition of the gas. But in order, nevertheless, to regulate tho temperature in the combustion chamber and to maintain it at the requisite) height, one only requires to correspondingly diminwh tho quantities of gas and air led into the furnace per unit of time; if the gas and air be loaded with too great a store of energy,